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MONTANA FOREST PRODUCTS BULLETIN

UTILIZATION AND MARKETING

Department of State Lands, Division of Forestry
2705 Spurgin Road, Missoula, Montana 59801
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GARY G. BROWN, State Forester

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This bulletin is mailed primarily to individuals engaged in the Forest Products Industry in Montana. In addition, it is mailed to county agents, lumber brokers, wholesalers, dealers of sawmill and logging equipment, educators, and Montana Tree Farmers, as well as the Departments of Forestry in many states.

The purpose of this newsletter is to communicate information regarding the properties and uses of wood products, promote efficiency in the utilization of wood from the stump to the end product, and to serve as an information source for members of the forest products industry.

All persons receiving this newsletter are asked to examine their mailing address and advise this office of any corrections needed for proper mailing.

Third Quarter Economic Report

Record production levels through the first three quarters of 1987 boosted employment and wages slightly in Montana's forest products industry, according to Charles Keegan, Director of Forest Products Research at the University of Montana's School of Business.

The estimates are based on a quarterly survey done in cooperation with the Montana Wood Products Association. The survey includes 31 plants, accounting for over 90 percent of the State's forest products manufacturing activity.

Estimated lumber production during the first nine months of 1987 was 1,272 million board feet, up from 1,160 million board feet produced in the first three quarters of 1986. Plywood production was up from 503 million square feet in the first three quarters of 1986 to 538 million square feet in the first three quarters of 1987. Nineteen eighty-six was a record lumber production year in Montana and a near-record production year for plywood.

Estimated production employment and wages were also up over 1986. An average of 4,777 production workers at mills were on the job during the three quarters of 1987, compared to 4,600 for the same time a year ago. Total wages paid to production workers were $88,632,000 in the first three quarters of 1987, compared to $85,440,000 for the first three quarters of 1986.

The figures refer only to production workers at sawmills, plywood plants, the pulp mill, particleboard and fiberboard plants, and utility pole plants. They account for approximately one-half of all workers in the forest products industry.

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SAWMILL RESIDUALS IN WESTERN MONTANA

By Bill Chandler
Stone Container Corporation

All sawmill operators know that when square lumber is cut from round logs a mountain of residual waste is produced in the form of slabs, sawdust, bark and shavings. In the early years of the sawmill industry, this residual waste was burned in tepee burners at a high cost.

With the mountains of waste material being produced, people began to find uses for it. In 1957 a pulp mill was built that utilized chips from the slabs. This was followed by sawmill boilers, composite board plants and the pulping of sawdust. A number of uses were found. Waste had become a by-product and an important part of a solid wood producers income. It had a value, but the value fluctuates with supply and demand. In 1981 the lumber market was in a recession. Sawmill production was down and so was their production of residuals. Demand for residuals was high and a sawmill could sell all of its residual material. Chips at one point in time commanded $40 per green ton.

The economy has improved since then. The record sawmill production of the last two years has put residuals into an over supply situation. The over supply of shavings, sawdust and bark is so great that they have little or no value in western Montana at this time. More is being used than in 1981, but currently much more is being produced. If a mill can give the material away, then they don't have to pay to haul it away. Again, the excess is a disposal problem and again it is being burned or sent to a land fill.

Chips have fared a little better and are still in demand. The price of chips is still well above the other residuals.

Few of the converting facilities can use all of a sawmills waste. Each makes specific products and each has its own quality requirements based on the desired end product and the limitations of its equipment.

Stone Container's pulp mill in Missoula, Montana, uses chips and sawdust to make paper. Chip receipts are by far the greatest volume requiring 200 trucks and 25 rail cars per day. The working circle includes all western Montana and reaches as far out as Wyoming, South Dakota, Idaho, and at times southern British Columbia.

Paper quality is determined by strength and appearance. Poor chip quality reduces both, gives low yields and increases handling problems in the pulp mill.

THE IDEAL CHIP: Clean wood and uniformity of size are the most important factors. Clean means no bark, rocks, dirt, plastic, char or any other material which may damage the processing equipment. All mills need clean chips. Uniformity of size allows for the even penetration of the liquor. If all chips were the same size, then there would be perfect penetration of the liquor.

The 264 foot high Kamyr digester at the Missoula pulp mill is the mills main digester producing 975 tons of pulp a day. The ideal chip for this digester is 7/8 inch in length (measured with the grain) and is 1/8 to 1/4 inch in thickness. Some pulp mills like a bigger chip and some mills like a smaller chip.

The chips are screened before going into the Kamyr. Chips over 2 inches in length are sent to the hogfuel pile (this is not economical). But some over- long, overthick chips do find their way into the digester. These oversized chips do not cook up completely and show up as uncooked wood on the paper, causing poor runability on the paper machines and printing in the box plants. It is also unsightly.

PIN CHIPS: Chips 3/8 inch to 1/2 inch in length, are a usable by-product that the mill screens from the Kamyr chips. They are digested in one of the smaller digesters. This fiber length is shorter than the fiber in a Kamyr chip, but the resulting paper strength is acceptable.

FINES: Any chip smaller than 3/8 inch in length, are too small to be accepted as an ideal chip. Fines that get into the Kamyr digester with the bigger, acceptable chips will be overcooked. The fiber turns to mush and is washed away. this reduces pulp yield and requires more pulping chemicals. Fines also adversely affect cooking uniformity by causing serious plugging problems in the Kamyr digester. This happens when liquor is extracted from the digester during the cooking process. Liquor must pass through screens on the side of the digester and the fines plug these screens. Recirculation of the liquor is stopped, and a large volume of wood is not completely cooked. The resulting paper has poor strength and poor appearance. Kamyr accepts are large enough and will not cause plugging.

Fines that are screened from the Kamyr chips are sent to the sawdust pile. The sawdust/fines mix is pulped in a separate digester set up specifically to handle the smaller particle. Fiber length is short and the resulting paper has reduced strength, but small volumes of sawdust pulp are acceptable when mixed with Kamyr pulp.

Bark doesn't completely digest. It comes out on the paper as uncooked pieces of bark. It is unsightly and detracts from appearance. It has no fiber and no strength. Bark also retains more sand and dirt than a clean chip.

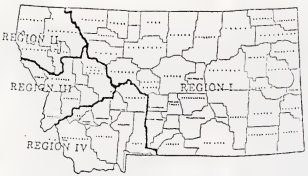
Burned wood or char will not pulp up and goes through to give black spots and specks on the finished sheet. The paper is down graded due to appearance and the char gives no contribution to strength. The amount of char that is acceptable in our chips is ZERO.

Nobody can use material contaminated with rocks, sand, or dirt. Such material causes damage and wear to the processing equipment. After passing through the system, it comes out as small pieces of rock, sand, or dirt on the finished sheet.

Sawmill residuals used to be a waste product and a disposal problem. Now a large percentage of Montana's residuals are being utilized. The quality of the residuals is very important. At the pulp mill, once contaminants get into the chip system they cannot be taken out. The only way to get a clean sheet of paper is to keep the contaminants out of the chips. This must be done at the sawmill.

MONTANA LOG PRICE REPORT

The State-wide log price report on the following page catalogs recently delivered average log prices to sawmills by species using four geographical areas within Montana. Prices are provided by approximately 35 sawmills operating within the State. The report is compiled through the Extension Forester's Office, School of Forestry, University of Montana, Missoula, Montana 59812.



MONTANA SAWLOG AND VENEER LOG PRICE REPORT

JANUARY-FEBRUARY 1988

The following information is a summary breakdown of recent past average prices reportedly paid by primary wood processors for logs of the various species listed. These prices are not necessarily a reflection of current market prices. Fair market prices may vary a great deal based on log size, length, quality, contract size and terms, and a number of other factors. All information reported is recent average price per thousand board feet (MBF), Scribner Decimal rule, delivered to the mill site, unless otherwise noted.

Prices provided for this report by individual firms are treated as confidential disclosure of the firm's operations. Any requests for mill-specific data which have been provided for the log report will be denied.

SAWLOGS Scribner Dec C MBF	REGION I	*	REGION II	*	REGION III	*	REGION IV	*
	Avg. Low High		Avg. Low High		Avg. Low High		Avg. Low High	
Ponderosa pine	$118/$105/$130	F	$166/$150/$180	G			$145/$145/$145	F
(Yellow)	$122/$105/$140	F	$209/$180/$250	G	$217/$180/$270	G	$145/$145/$145	F
(Bull)	$108/$105/$110	F	$147/$135/$160	G-P	$150/$120/$180	G-P	$145/$145/$145	F
Lodgepole pine	$140/$140/$140	F	$154/$145/$180	G-F	$157/$155/$165	G-F	$169/$160/$185	G
Douglas-fir	$140/$140/$140	F	$141/$135/$180	G-P	$157/$150/$175	G-F	$168/$160/$185	G-F
Western larch			$150/$135/$160	G-P	$157/$150/$175	F		
Engelmann spruce			$152/$135/$170	G	$170/$160/$180	G-F	$169/$160/$185	G
Subalpine fir			$146/$140/$155	G-P	$145/$140/$155	F-P	$172/$160/$185	G-F
Grand fir			$145/$135/$155	G-P	$145/$140/$155	F		
Western red cedar			$180/$160/$200	G	$150/$150/$150	F		
Hemlock			$145/$135/$150	G-P	$120/$120/$120	P		
White pine			$212/$180/$275	G-F	$200/$200/$200	F		

VENEER LOGS Scribner Dec C MBF	STATEWIDE REPORT	
Species	Avg. Low High	Demand next 60 days*
Douglas-fir	$170/$170/$170	G
Ponderosa pine (bull)	$155/$155/$155	G
Western larch	$170/$170/$170	G
Engelmann spruce	$170/$170/$170	G

* Demand next 60 days
G = Good
F = Fair
P = Poor

TREATING WOOD WITH BORATES

Since the Environmental Protection Association (EPA) imposed restrictions on the use of arsenic and copper compounds in wood preservative treatment processes. Efforts have been under way to find new chemicals to replace them. One new promising chemical for above ground preservative treatment applications is borate.

Research efforts have been underway for some time by the U.S. Forest Service to evaluate the use of borate as a wood treatment preservative. Borate is a water soluble salt that converts to boric acid within wood. Borates have been used in Australia and New Zealand for over 30 years to provide long term safe protection of hardwood and softwood building timbers. The following statement by the New Zealand Wood Preservers Association support the U.S. research efforts. "Boron treatment has been the standard means of treating house framing timbers in New Zealand for years. Boron treated timbers have been and will continue to be used with confidence by the house building industry for many years to come."

What is Borate? Borax, Boric Acid and other compounds are refined from ores containing elemental boron. Large supplies can be found in the United States, Russia, Turkey, and China. Some other uses of boron containing compounds are washing powders and roach control products.

Some treatment uses are for trusses, wall studs and plates, ceiling and floor joists, millwork, picture frames, furniture and other high value items within homes. Boron is also a good chemical treatment for log homes inside and out, and treatment of green lumber for export.

What treatment is best? Boron can be applied by spraying, dipping, brushing or pressure treatment. The recommended method is dip diffusion with green wood. This process employs waterborne preservatives that will diffuse out of the water of the treating solution into the green woods cells. Because borates are none corrosive a pit can be dug and lined with plastic for a treating tank if necessary.

Two VHS tapes titled "Protecting Wood With Borates" and "How To Do Treatment of Dip Borates" are available by contacting the Montana Forest Products Bulletin Editor or the USDA Forest Service, Region 8, Forest Pest Management, P.O. Box 2680, Asheville, North Carolina 28802.

The following is a list of suppliers of chemicals for borate diffusion treatment of wood:

1	2	3
Ammonium Pentaborate Sodium Sulphate and other Borates	Sodium Borates and Boric Boric Acid	TIM-BOR (Sodium Borate) Borax/Boric Acid (Registered in Montana)
A/Z Bor Corporation 1810 Magnavox Way Fort Wayne, IN 46804 Ph: (219) 747-9183	Kerr-McGee Chemical Corp. P.O. Box 25861 123 Robert S. Kerr Ave. Oklahoma City, OK 73125 Ph: 1-800-654-3991	U.S. Borax & Chemical Corp. 3075 Wilshire Blvd. Los Angeles, CA 90010-1294 Ph: (213) 331-5311

DEPARTMENT OF SATE LANDS TIMBER SALE

Blacktail Timber Sale:

Sealed bids will be received by the Administrator, Forestry Division, Department of State Lands, 2705 Spurgin Road, Missoula, Montana, up to 2:00 p.m., January 20, 1988, for the merchantable sawtimber designated for cutting on Sections 23 and 24, T12S-R6W, estimated to contain 800 MBF Douglas-fir, and 1 MBF dry sawlogs.

Full particulars regarding the terms of the contract, bid forms and regulations governing the sale may be obtained from the Forestry Division in Missoula, Montana, the Central Land Office, 8001 North Montana Avenue, Helena, Montana, (Phone: 444-3633), or the Bozeman Unit Office, 611 North Wallace, Bozeman, Montana (Phone: 586-5243).

LOGGING SAFETY GUIDE AVAILABLE

The American Pulpwood Association (APA) has prepared a catalog of films, videos, slide series, and brief published material on forest industry safety. The catalog covers woodlands and harvesting activity to delivery of raw material to the mill, including woodyard handling.

The great majority of the materials will be loaned for free, or at very low cost from indicated sources. The listings are presented in a concise, easily referenced format under subject headings arranged according to their chronological position in the preharvest-harvest-transport scheme. Materials will be of interest to industry professionals, as well as to instructors and students training in industrial forestry techniques.

The 29-page Logging Safety Resource Guide is available from APA, 1025 Vermont Ave., NW, Suite 1020, Washington, D.C. 20005 for $2.00 for APA members, and $4.00 for all others. Orders should refer to stock number 87-A-8.

Source: Forest Products Journal, Vol. 37, No. 11/12.

NEWS FROM THE FOREST SERVICE

Washington, D.C. (December 3)--A new report detailing the management of 12 million acres of public land in the Greater Yellowstone Area of Wyoming, Montana, and Idaho is now available, F. Dale Robertson, Chief of the U.S. Department of Agriculture's Forest Service announced today.

The report summarizes management plans for six National Forests, as well as for Yellowstone and Grand Teton National Parks.

The report, "The Greater Yellowstone Aggregation," illustrates the present extent and condition of natural resources within the Greater Yellowstone Area and shows what future resources should result from current management plans.

The report is the result of a two-year study conducted by the Greater Yellowstone Coordinating Committee, which is composed of Forest Service and National Park Service personnel who manage federal lands in the area. The committee will conduct a thorough review of the report to determine what followup actions are needed to strengthen coordination and improve future decisions.

Copies of the "Greater Yellowstone Aggregation" report, which includes 51 full color maps measuring 20 inches by 27 inches each, are available for $65.00 each from the Yellowstone Association, P.O. Box 117, Yellowstone National Park, Wyoming 82190.

EQUIPMENT FOR SALE

For Sale: One new extra heavy duty cup and saucer for log truck $100.00. Contact: Rodems Trucking, Box 69, Jefferson City, Montana 59638, phone (406) 933-8566.

For Sale: ¼" to 2¼" dia. x 16 ft. lg. or larger dowels available in lengths up to 10 ft. long. Balls, bases, blocks, electronic parts, handles, knobs, mouldings, plugs, reels, rollers, shaping, spools, toy parts, wedges, and wheels. Available in plain, dip spray or tumble finishes. We treat for outside use. Also, Cooper's and Food Processors supplies. Many other wood products to customer specs. Contact: Ed Koelbl, American Wood Working Company, P.O. Box 335, Montello, Wisconsin 53949, phone (608) 297-2131.

Logging Equipment for Sale: Cable Skidders: 1) '76 Tree Farmer C5D $12,800; 2) Tree Farmer C5D $9,500; 3) Tree Farmer C6D $18,000; 4) JD 440A $8,500; 5) '80 JD 540B $24,500; 6) Choice of (4) JD 440C never used in logging, low hour; 7) '80 JD 640 $26,000; 8) C5 Tree Farmer $5,500; Grapple Skidders: 9) '79 JD 540B $24,000; 10) '80 640 Amec $28,500; 11) '79 C7D Tree Farmer $23,000; 12) '79 C5D Tree Farmer Esko 26 $19,000; 13) '76 TJack 380 $18,500; 14) '78 TJack 380 $21,000; Feller Bunchers: 15) HydroAx 521 Flail with Morbark 15" Shear $28,500; 16) Franklin 170 Wheel Loader 20" Shear $26,500; 17) Drott 40 EXC with 20" Shear Big Finals $33,500; 18) '82 JD 410 Backhoe $15,800; 19) '79 JD 410 Backhoe $13,500; 20) We have some repairable skidders and are currently dismantling skidders for parts. 21) We have or can find, most parts for your logging needs. We also have other equipment located. Contact: Midwest Tractor, Inc., Highway 10 - 4 Miles West, Big Lake, Minnesota 55309, phone (612) 263-3777, or evenings Ron (612) 295-5037.

For Sale: FWD Wagner log loader, Model L24, SN L24302; Log loader, extendable boom, clam grab, asking $4,000; new 671 GMC diesel engine, complete with radiator, starter, etc., 450 hrs. on it, $5,000. Contact: Leonard Simon, 457 Browns Gulch, Butte, Montana 59701, phone (406) 782-5231.

For Sale: Dozer D6 with blade, high-speed logging winch, $6,400; Jammer with double drums, $1,190; 4 loader tires and wheels, 1600 x 25, $190 each; 1962 Chev 16' flatbed, stock racks, air brakes, $1,390. Sell or trade. Contact Watters Lumber Company, P.O. Box 666, Thompson Falls, Montana 59873, phone (406) 827-3595.

HAVE A HAPPY AND PROSPEROUS NEW YEAR!

If you wish to advertise a forest product or a piece of wood-processing machinery in this bulletin complete the form below. No charge is made for this service. If you wish to rerun an item, a written request must be submitted before the next issue.

NAME OF PERSON OR FIRM: _____

MAILING ADDRESS: _____

ZIP CODE: _____ PHONE: _____

Type or print your advertisement in the space below, detach and return to:

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Division of Forestry
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Missoula, MT 59801

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